In the Claims

Claims pending

- At time of the Action: Claims 1-33.
- After this Response: Claims 1, 3-7, 12-19, 21, 26-29 and 31-33.

Currently Amended Claims: Claims 1, 4-7, 12-15, 19, 21, 26-29 and 31-33.

Currently Canceled claims: Claims 2, 8-11, 20, 22-25 and 30.

1. (**Currently Amended**) A kernel-level transaction system, comprising:

a memory;

one or more processors operatively coupled to the memory and disposed within one or more devices;

a transaction manager disposed within each device, each said transaction manager including ~~plural~~ a plurality of kernel objects to implement a transaction having plural operations, wherein the plurality of kernel objects include a transaction object to represent a transaction, a resource manager object to represent a resource participating in the transaction, and an enlistment object to

enlist participants in the transaction, wherein the transaction is performed at the kernel level; and

a security descriptor, applied to at least one of the kernel objects, to identify at least one user, to identify one of the operations of the transaction that may be performed on the kernel object to which the security descriptor is applied, and to identify a right indicating that the identified user is permitted or prohibited to perform the operation.

2. (**Canceled**)

3. (**Original**) A system according to claim 1, wherein the security descriptor comprises at least one access control entry (ACE), which includes a security identifier (SID) and rights corresponding to the SID.

4. (**Currently Amended**) A system according to claim [[2]] 1, wherein the security descriptor is applied to the transaction object, and the operation identified by the security descriptor includes at least one of:

set information regarding the transaction object,

enlist the transaction object in the transaction,

render data updates in connection with the transaction object durable,

abort the operation on the transaction object,

transmit data from the transaction object to another object,

the current point of the transaction at the transaction object, and

transmit data regarding the transaction to another device.

5. (**Currently Amended**) A system according to claim [[2]] 1, wherein the security descriptor is applied to the resource manager object, and the operation identified by the security descriptor includes at least one of:

retrieve information regarding the resource manager object,

set information regarding the resource manager object,

determine the state of a transaction at a moment of transaction failure,

enlist the resource manager object in a transaction,

register the resource manager object in the transaction,

receive notification upon resolution of a transaction at the resource manager object, and

set resource data in accordance with the transaction resolution.

6. (**Currently Amended**) A system according to claim [[2]] 1, wherein the security descriptor is applied to the enlistment object, and the operation identified by the security descriptor includes at least one of:

get information regarding the enlistment object,

set information regarding the enlistment object,

determine a state of enlistments at a moment of transaction failure

obtain and reference an enlistment key,

rollback the transaction and to respond to notifications, and

perform operations a superior transaction manager would perform.

7. (**Currently Amended**) A method of implementing a kernel-level transaction, comprising:

attaching a security descriptor to at least one of ~~plural~~ a plurality of kernel objects utilized in a transaction; and

performing an operation for a transaction on the at least one kernel object in accordance with the rights accorded by the security descriptor attached to the at least one kernel object, wherein the security descriptor includes identification for at least one user, an operation that is able to be performed on the at least one kernel object to which the security descriptor is attached, and a right indicating that the identified user is permitted or prohibited to perform the operation, and further wherein the at least one kernel object comprises a transaction object, a resource manager object and/or an enlistment object.

8. (**Canceled**)

9. (**Canceled**)

10. (**Canceled**)

11. (**Canceled**)

12. (**Currently Amended**) A method according to claim [[9]] 7, wherein the operation identified by the security descriptor attached to the transaction object includes at least one of:

set information regarding the transaction object,

enlist the transaction object in the transaction,

render data updates in connection with the transaction object durable,

abort the operation on the transaction object,

transmit data from the transaction object to another object,

save the current point of the transaction at the transaction object, and

transmit data regarding the transaction to another device.

13. (**Currently Amended**) A method according to claim [[10]] 7, wherein the operation identified by the security descriptor attached to the resource manager object includes at least one of:

retrieve information regarding the resource manager object,

set information regarding the resource manager object,

determine the state of a transaction at a moment of transaction failure,

enlist the resource manager object in a transaction,

register the resource manager object in the transaction,

receive notification upon resolution of a transaction at the resource manager object, and

set resource data in accordance with the transaction resolution.

14. (**Currently Amended**) A method according to claim [[11]] 7, wherein the operation identified by the security descriptor includes at least one of:

get information regarding the enlistment object,

set information regarding the enlistment object,

determine a state of enlistments at a moment of transaction failure,

obtain and reference an enlistment key,

rollback the transaction and to respond to notifications, and

perform operations a superior transaction manager would perform.

15. (**Currently Amended**) A computer-readable medium having stored thereon an object attached to a kernel object, the object comprising:

a first data entry identifying at least one user;

a second data entry identifying an operation capable of being performed on the kernel object by the user identified by the first data entry, wherein the kernel object comprises a transaction object, a resource manager object and/or an enlistment object; and

a third data entry indicating a right for the user identified by the first data entry to perform the operation identified by the second data entry;

wherein the object attached to the kernel object is a security descriptor.

16. (**Original**) A computer-readable medium according to claim 15, wherein the kernel object is a transaction object, and the identified operation includes at least one of:

set information regarding the transaction object,

enlist the transaction object in the transaction,

render data updates in connection with the transaction object durable,

abort the operation on the transaction object,

transmit data from the transaction object to another object,

save the current point of the transaction at the transaction object, and

transmit data regarding the transaction to another device.

17. (**Original**) A computer-readable medium according to claim 15, wherein the kernel object is a resource manager object, and the identified operation includes at least one of:

retrieve information regarding the resource manager object,

set information regarding the resource manager object,

determine the state of a transaction at a moment of transaction failure,

enlist the resource manager object in a transaction,

register the resource manager object in the transaction,

receive notification upon resolution of a transaction at the resource manager object, and

set resource data in accordance with the transaction resolution.

18. (**Original**) A computer-readable medium according to claim 15, wherein the kernel object is an enlistment object, and the identified operation includes at least one of:

get information regarding the enlistment object,

set information regarding the enlistment object,

determine a state of enlistments at a moment of transaction failure,

obtain and reference an enlistment key,

rollback the transaction and to respond to notifications, and

perform operations a superior transaction manager would perform.

19. (**Currently amended**) A transaction method, comprising:

implementing a transaction among kernel objects; and

securing the transaction utilizing an operating system security model that applies a security descriptor to at least one of the kernel objects participating in the transaction;

wherein the security descriptor includes identification for at least one user, an operation to be performed on the at least one kernel object to which the security descriptor is attached, and a right indicating that the identified user is permitted or prohibited to perform the operation and each of the kernel objects comprise a transaction object, a resource manager object and/or an enlistment object.

20. (**Canceled**)

21. (**Currently Amended**) A method of implementing a transaction, comprising:

attaching a security descriptor to at least one of ~~plural~~ a plurality of objects utilized in a transaction, wherein the security descriptor includes identification for at least one user, an operation to be performed on the at least one kernel object to which the security descriptor is attached, and a right indicating that the identified user is permitted or prohibited to perform the operation and each of the kernel objects comprise a transaction object, a resource manager object and/or an enlistment object; and

performing an operation for a transaction on the at least one object in accordance with the rights accorded by the security descriptor attached to the at least one object.

22. (**Canceled**)

23. (**Canceled**).

24. (**Canceled**)

25. (**Canceled**)

26. (**Currently Amended**) A method according to claim [[23]] 21, wherein the operation identified by the security descriptor attached to the transaction object includes at least one of:

set information regarding the transaction object,

enlist the transaction object in the transaction,

render data updates in connection with the transaction object durable,

abort the operation on the transaction object,

transmit data from the transaction object to another object,

save the current point of the transaction at the transaction object, and

transmit data regarding the transaction to another device.

27. (**Currently Amended**) A method according to claim [[24]] 21, wherein the operation identified by the security descriptor attached to the resource manager object includes at least one of:

retrieve information regarding the resource manager object,

set information regarding the resource manager object,

determine the state of a transaction at a moment of transaction failure,

enlist the resource manager object in a transaction,

register the resource manager object in the transaction,

receive notification upon resolution of a transaction at the resource manager object, and

set resource data in accordance with the transaction resolution.

28. (**Currently Amended**) A method according to claim [[25]] 21, wherein the operation identified by the security descriptor includes at least one of:

get information regarding the enlistment object,

set information regarding the enlistment object,

determine a state of enlistments at a moment of transaction failure,

obtain and reference an enlistment key,

rollback the transaction and to respond to notifications, and

perform operations a superior transaction manager would perform.

29. (**Currently Amended**): A kernel-level transaction system, comprising:

a memory;

one or more processors operatively coupled to the memory;

means for implementing a transaction among kernel objects, wherein the kernel objects include a transaction object to represent a transaction, a resource manager object to represent a resource participating in the transaction, and an enlistment object to enlist participants in the transaction, wherein the transaction is performed at the kernel level; and

means for securing the transaction by applying a security descriptor to at least one of the kernel objects,

wherein the security descriptor identifies at least one user, an operation to be performed on the kernel object to which the security descriptor is applied, and a right indicating that the identified user is permitted or prohibited to perform the operation.

30. (**Canceled**)

31. (**Currently Amended**) A system according to claim [[30]] 29, wherein the security descriptor is applied to the transaction object, and the operation identified by the security descriptor includes at least one of:

set information regarding the transaction object,

enlist the transaction object in the transaction,

render data updates in connection with the transaction object durable,

abort the operation on the transaction object,

transmit data from the transaction object to another object,

save the current point of the transaction at the transaction object, and

transmit data regarding the transaction to another device.

32. (**Currently Amended**) A system according to claim [[30]] 29, wherein the security descriptor is applied to the resource manager object, and the operation identified by the security descriptor includes at least one of:

retrieve information regarding the resource manager object,

set information regarding the resource manager object,

determine the state of a transaction at a moment of transaction failure,

enlist the resource manager object in a transaction,

register the resource manager object in the transaction,

receive notification upon resolution of a transaction at the resource manager object, and

set resource data in accordance with the transaction resolution.

33. (**Currently Amended**) A system according to claim [[30]] 29, wherein the security descriptor is applied to the enlistment object, and the operation identified by the security descriptor includes at least one of:

get information regarding the enlistment object,

set information regarding the enlistment object, and

determine a state of enlistments at a moment of transaction failure.